

Technical Standard: Welding Technology

The welding student will be introduced to many welding processes used for metal fabrication. The student will be able to use tools and equipment, be familiar with safety issues and be familiar with career opportunities in the welding industry. The student will be familiar with the following processes: Shielded Metal Arc Welding, Oxy/fuel Cutting, Welding and Brazing, Gas Metal Arc Welding, Tungsten Arc Welding, Plasma Arc Cutting. The core areas are: Shielded Metal Arc Welding, Oxy/fuel, and Gas Metal Arc Welding. The student will then select, with the assistance of the instructor, elective areas to complete the remaining requirements.

Indicator A:

Demonstrate knowledge of safety and proper shop operation.

Indicator B:

Develop competencies in the safe and efficient use of the tools, machines, materials, and basic welding fundamentals.

Indicator C:

Apply concepts from mathematics, science, and communications in the context of welding technology.

Indicator D:

Demonstrate knowledge of basic print reading and material layout and fabrication.

Indicator E:

Demonstrate knowledge in diagnosing and corrective procedures associated with welding equipment and processes.

Indicator F:

Demonstrate knowledge of Oxy/fuel cutting, welding, and brazing. General safety and equipment operation and handling.

Indicator G:

Demonstrate knowledge of the Shielded Metal Arc Welding process: general safety, equipment set-up and handling, and metal preparation.

Indicator H:

Will demonstrate competencies operating Shielded Metal Arc Welding equipment on various metal thickness, joint designs, weld positions, and using various arc electrodes.

Indicator I:

Demonstrate knowledge of Gas Metal Arc Welding: General safety, equipment set-up and adjustment.

Indicator J:

Demonstrate competencies with Gas Metal Arc welding equipment on various metal thickness, joint design, and welding positions, using a solid wire electrode.

Indicator K:

Demonstrate knowledge of Gas Tungsten Arc Welding: General safety, equipment set-up and adjustment.

Indicator L:

Demonstrate competencies with Gas Metal Arc Welding equipment on aluminum plate in the flat position.

Indicator M:

Demonstrate knowledge of the Plasma Arc Cutting process: general safety, equipment set-up and adjustment.

Indicator N:

Demonstrate competencies using plasma cutting equipment: cutting angles, circles, and straight cuts.

Indicator O:

Demonstrate ability to prepare coupons for destructive and non-destructive testing.